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**THE BREEDING BIOLOGY OF PHEASANT TAILED JACANA,  
*HYDROPHASIANUS CHIRURGUS* IN WETLANDS OF PAKISTAN**

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**ABSTRACT**

Pheasant Tailed Jacana, *Hydrophasianus chirurgus* is an attractive bird sustaining its presence in wetlands of Pakistan during summers. To facilitate conservation, the breeding biology of specific birds was recorded during 2004-07. According to the observations, the clutch size remains between 1-4 eggs, and most of the fertile females laid 2 consecutive clutches to hand over to two different males for hatching and chick rearing. Incubation calculated between 25-29 days hatchability was found to be around 80%. Defensive responses, egg laying, and chick care were observed to better understand the general behaviour of the species.

**Keywords:** Pheasant tailed jacana, *Hydrophasianus chirurgus*, Wetlands of Pakistan, Birds of Pakistan.

**INTRODUCTION**

The shallow wetlands, adapted as habitat by the Pheasant-tailed Jacana, are generally extremely productive, and constitute a rich source of food for man, his livestock and also for breeding, wintering, and migrating birds. The general biology of the species with regard to Pakistan is known from a compilation of different casual reports and through reports appearing on the species from different parts of its distribution range (Roberts, 1991). This demands that base line studies on the biology of the species may be instituted so that the biological potentials of the species are understood and the factors affecting its population level are determined. Such studies can be useful in developing conservation strategy for the species, ensuring the pleasant look of

our wetlands, but will also help in future prediction of adverse changes being experienced by the wetlands under the cover of floating vegetation that may remain unnoticed by a human observer. The present research has been instituted for the study of the biology of the Pheasant-tailed Jacana (*Hydrophasianus chirurgus*).

The members of this order occur in a wide range of water-associated habitats, which are generally extremely productive and provide a rich source of food for breeding, migrating, and wintering birds. This is one of the large avian orders and exhibits wide diversity in morphology, behaviour, and life histories (Sibley and Ahlquist, 1990). Historically, many species of this order were harvested by humans for meat, feathers, oil, and eggs. This research was

performed to study the biology of Jacana with reference to habitat, feeding, breeding, and general behavior.

## MATERIAL AND METHODS

The established nests of the Pheasant-tailed Jacana were spotted through a search of the area with the help of the local hunters and Wildlife Department staff at different water bodies during different parts of the summers between 2004 and 2007. The nests were marked with appropriate tags attached with the vegetation and were regularly visited for observations from a suitable location without disturbing the bird with naked eyes or through the available binoculars/spotting scope. The selected breeding females were also marked through the territorial location and other visible marks. The marked breeding female and the nest was followed through daily early morning observations on the laying of the clutch, number of the eggs laid in a complete clutch, number of the days of incubation and number of the hatched eggs. The observation collected from different nests/breeding females were pooled to develop generalizations for different localities, ignoring the individual ponds or the year.

## RESULTS

The data collected on the breeding parameters of the Pheasant-tailed Jacana population summering between 2004 and 2007 at four water bodies under the present study has been presented in Table 1. The table suggests that different females laid different numbers of the clutches, which ranged between 1 and 4. The average number of

the clutches laid by different females was around 2. The number of the clutches produced at Marala ( $2.00 \pm 0.31$ ), Qadirabad ( $2.00 \pm 0.29$ ), Balloki ( $1.96 \pm 0.41$ ) and Sulemanki ( $1.92 \pm 0.37$ ) was not significant at 0.05 level.

The number of eggs laid per clutch varied between 2 and 4, with a rare clutch having 5 eggs. The average number of the eggs produced per clutch was the highest at Balloki ( $4.06 \pm 0.39$ ), followed by Marala ( $3.71 \pm 0.36$ ), and Qadirabad ( $3.47 \pm 0.40$ ), while the smallest size of the clutch was observed at Sulemanki ( $3.36 \pm 0.28$ ). The average number of clutch produced at different localities was not significantly different ( $p < 0.05$ ), except between Balloki and Sulemanki, where it was slightly significant ( $p > 0.05$ ).

The field observations suggested that the incubation was totally attended by the males, from the laying of the first egg of the clutch by the females. The successful incubation lasted for 25 – 29 days. The average incubation period was significantly higher ( $p > 0.05$ ) at Balloki ( $28.02 \pm 0.046$  days), while the other three localities, i.e., Qadirabad ( $27.14 \pm 0.30$  days), Sulemanki ( $26.97 \pm 0.23$  days), or Marala (26.87 days) were not significantly different from one another.

The average number of the eggs hatching per clutch was the highest at Marala ( $3.00 \pm 0.22$ ), followed by Qadirabad ( $2.87 \pm 0.29$ ), Sulemanki ( $2.81 \pm 0.46$ ) and the lowest number of the eggs hatched per clutch was at Balloki ( $2.76 \pm 0.41$ ). The different localities were not significantly different for the number of the eggs hatched per

**Table 1: Breeding of Pheasant Tailed Jacana during 2004 to 2007.**

	N	Eggs (#)	Hatchability (#)	Incubation (days)	Clutch (#)	Mortality (#)
Marala	36	3.71±0.36	3.00±0.22	26.86±0.26	2.00±0.31	1.00±0.31
Qadirabad	67	3.47±0.4	2.87±0.29	27.14±0.3	2.00±0.29	1.00±0.28
Balloki	29	4.06±0.39	2.76±0.41	28.02±0.36	1.96±0.41	2.00±0.48
Sulemanki	48	3.36±0.28	2.81±0.46	26.97±0.23	1.92±0.37	1.00±0.32

clutch. The successful hatchability of the eggs was the highest at Sulemanki (83.7%), followed by Qadirabad (82.7%), and Marala (81.8%), and the minimum hatchability was recorded for Balloki (68.0%).

### DISCUSSION

The present information on the breeding potentials of the species has a normal breeding behavior, as suggested in different reports (Grizmek, 1972; Stuart *et al.*, 1999; Thongaree *et al.*, 1995). The present results suggest that females lay an average of two clutches, with a range of 1-4 and is basically polyandrous. The clutch size ranged between 2 and 4, with mean clutch size remaining between 3.5. One of the females laid 5 eggs in a clutch. The incubation period ranges between 25 and 29 days. The hatching success is around 75%. This all suggests that the population is normally breeding with its full potentials as are decided by the species.

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